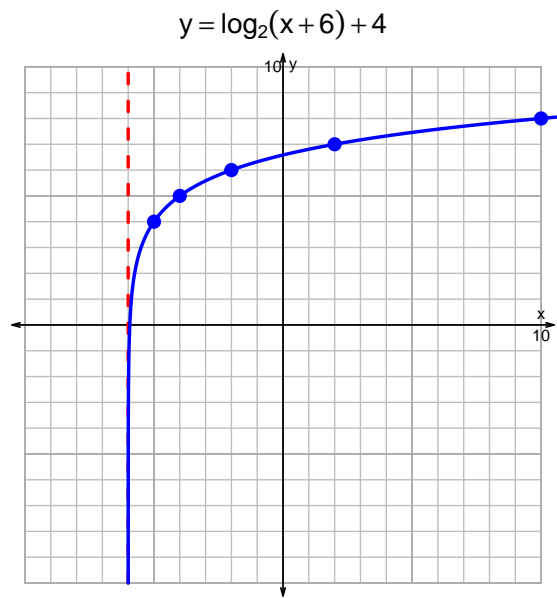
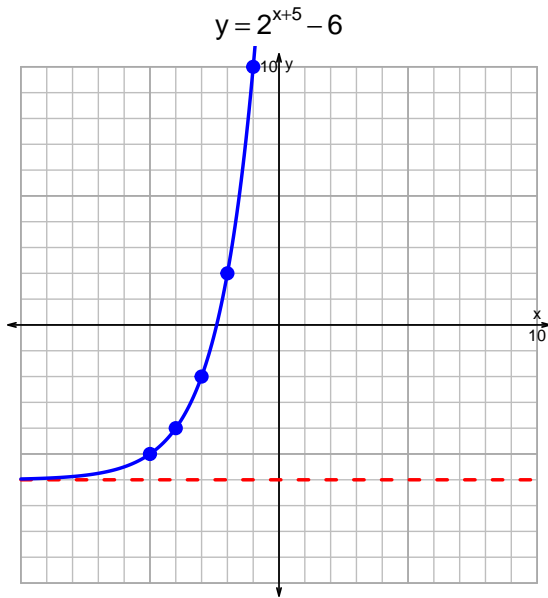


Date:

s18QUIZ: EXP LOG (SLTN v261)

1. Graph $y = 2^{x+5} - 6$ and $y = \log_2(x + 6) + 4$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-13 = \left(\frac{-3}{4}\right) \cdot 2^{-7t/5}$$

Divide both sides by $\frac{-3}{4}$.

$$\frac{13 \cdot 4}{3} = 2^{-7t/5}$$

Take log, base 2, of both sides.

$$\log_2 \left(\frac{13 \cdot 4}{3} \right) = \frac{-7t}{5}$$

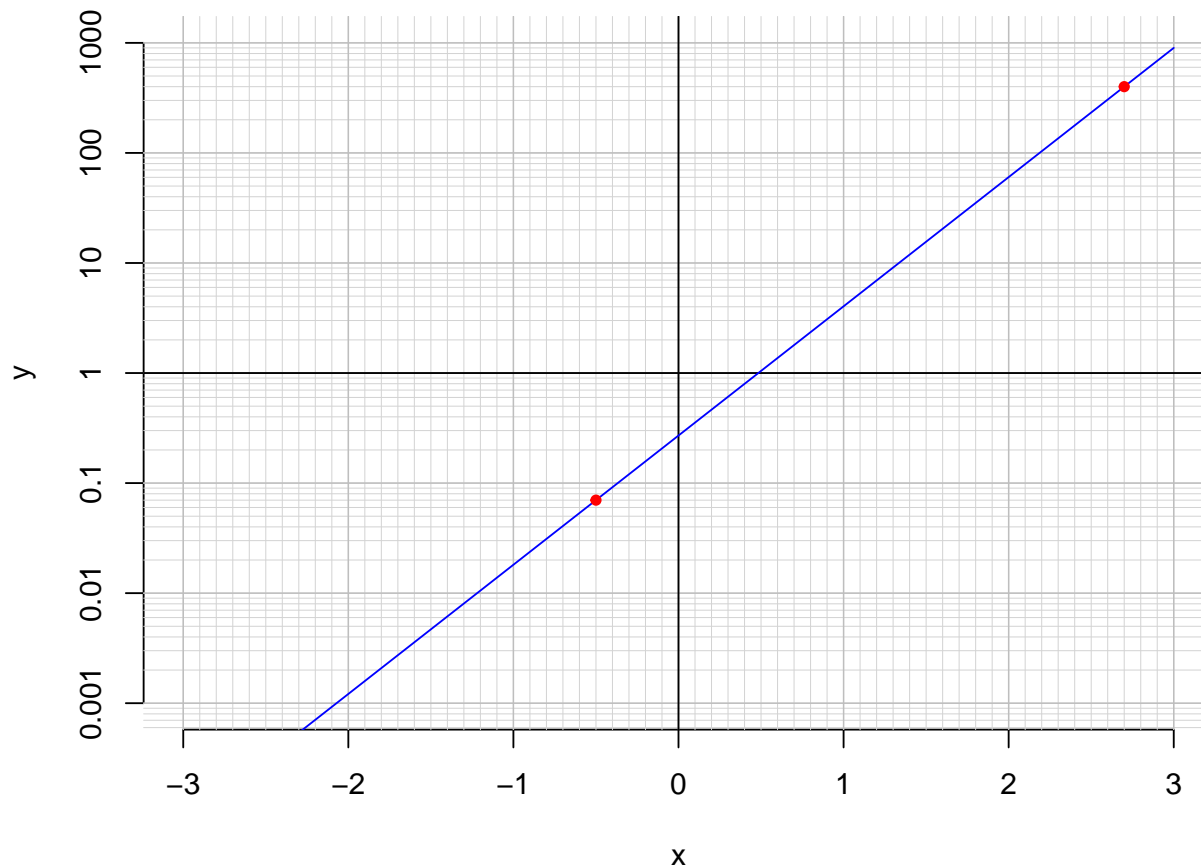
Divide both sides by $\frac{-7}{5}$.

$$\frac{-5}{7} \cdot \log_2 \left(\frac{13 \cdot 4}{3} \right) = t$$

Switch sides.

$$t = \frac{-5}{7} \cdot \log_2 \left(\frac{13 \cdot 4}{3} \right)$$

3. An exponential function $f(x) = 0.27 \cdot e^{2.7x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(-0.5)$.

$$f(-0.5) = 0.07$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{1}{2.7} \cdot \ln\left(\frac{x}{0.27}\right)$$

- c. Using the plot above, evaluate $f^{-1}(400)$.

$$f^{-1}(400) = 2.7$$